NATURAL RESOURCES CONSERVATION SERVICE

VIRGINIA CONSERVATION PRACTICE STANDARD

WATERING FACILITY

(No.)

CODE 614

DEFINITION

A device (tank, trough, or other watertight container) for providing animal access to water.

PURPOSE

To provide watering facilities for livestock and/or wildlife at selected locations in order to:

- Protect and enhance vegetative cover through proper distribution of grazing
- Provide erosion control through better grassland management
- Protect streams, ponds and water supplies from contamination by providing alternative access to water

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all land uses where there is a need for new or improved watering facilities.

CRITERIA

GENERAL CRITERIA APPLICABLE TO ALL PURPOSES

A trough or tank shall have adequate capacity to meet the water requirements of the livestock and/or wildlife. This will include the storage volume necessary to carry over between periods of replenishment. Animal water requirements can be obtained from the NRCS Engineering Field Handbook, Table 11-1. Where water supplies are dependable and livestock are checked daily, troughs with little water storage capacity may be used. Troughs or tanks must provide the daily water requirement of the livestock and provide access to the entire herd within a short period of time.

The site should be well drained; if not, drainage measures will be provided. Areas adjacent to the trough or tank will be trampled by livestock shall be graveled, paved, or otherwise treated to provide firm footing and reduce erosion. Design of the protective surface around the trough shall be in accordance with NRCS Virginia Conservation Practice Standard *Heavy Use Area Protection (Code 561)*.

Automatic water level control and/or overflow facilities shall be provided as appropriate. Valves or pipes shall be protected by shields or covers to prevent damage by livestock and overflow pipes shall be protected from potential algae or debris blockage. Overflow shall be piped to a stable or suitable point of release. The trough and outlet pipes will be protected from freezing and ice damage. Freeze-proof troughs or electric heaters may be used.

When a roof is placed over the trough to provide shade, the roof shall be designed for appropriate snow and wind loads and shall be durable to withstand anticipated livestock and wildlife activities.

All materials used in a livestock watering facility shall have a life expectancy that meets or exceeds the planned useful life of the system. Common construction materials are reinforced concrete, steel, fiberglass, plastic and wood. All designs shall meet the industry standards for the material being used. Generally applicable design

requirements and procedures can be found in the documents referenced at the end of this standard. Concrete structures shall be constructed from a concrete mix producing a minimum compressive strength of 3,500 psi at 28 days. Galvanized steel tanks shall have a minimum thickness of 16 gauge. Plastic and fiberglass structures shall be made of ultraviolet resistant materials or shall have a durable coating to protect the structure from deterioration due to sunlight.

Used equipment tires shall be durable and free of chemical residues.

CONSIDERATIONS

This practice may adversely affect cultural resources and must comply with GM 420, Part 410.

The siting of a livestock watering facility is a function of conservation planning for the agricultural enterprise to minimize erosion from the concentration of animal traffic.

Watering facilities should be accessible to small animals. Escape ramps or protective fencing to protect small animals should be installed.

Adequate protection for livestock during the winter should be considered.

Cut-off values, removable risers, or other devices should be considered if freezing may be a problem during winter months if the water facility is not used.

PLANS AND SPECIFICATIONS

Plans and specifications for installing troughs and tanks shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. If the trough and/or tank is a component of a system that includes additional conservation practices, the information necessary to construct these additional practices will also be conveyed on the plans.

Development of plans will be guided by the Engineering Field Handbook, Chapter 5, and shall be in accordance with the National Engineering Manual, Parts 541 and 542.

OPERATION AND MAINTENANCE

An Operation and Maintenance plan specific to the type of installed trough or tank shall be provided to the landowner. The plan shall include, but not be limited to, the following provisions:

- Check for debris, algae, sludge or other materials in the trough which may restrict the inflow or outflow system
- Check for leaks and repair immediately if any leaks are found
- Check the automatic water level device to ensure proper operation
- Check to ensure that adjacent areas are well protected against erosion
- Check to ensure the outlet pipe is freely operating and not causing erosion problems
- Prepare guidance for winter weather, such as adding material in the storage area to allow for ice expansion without damage

Algae and iron sludge accumulation should be addressed in areas with water quality that is known to cause problems. Chemicals such as copper sulfate and chloride can be recommended as needed, as long as local rules and regulations are followed.

REFERENCES

1. Engineering Field Handbook, USDA-NRCS.
2. National Engineering Manual.
3. Manual of Steel Construction, American Institute of Steel Construction.
4. *Timber, National Design Specification for Wood*, American Forest and Paper Association.
5. Concrete, ACI 318, American Concrete Institute.
6. Masonry, Building Code Requirement for Masonry Structures, ACI 530, American Concrete Institute.

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Approved Practice Narratives

(No.)

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614 D1 Watering Facility: Install a watering trough or tank to protect and enhance vegetative cover through proper distribution of grazing.

614 D2 Watering Facility: Install a watering trough or tank to provide erosion control through better grassland management.

614 D3 Watering Facility: Install a watering trough or tank to protect streams, ponds, and water supplies from contamination by providing alternative access to water.